
MEETING OF THE
Expert Team on WORLD DATA CENTRES
(JMA, Tokyo, Japan, 21-23 January 2014)

Report of the Chair of ET-WDC

(submitted by Jörg Klausen)

1. (Current) Terms of Reference

- To coordinate the activities of GAW WDCs and the GAW Station Information System (GAWSIS);
- To formulate GAW requirements for the WMO Information System (WIS) and contribute to defining and coordinating services for operational, time-critical applications so that GAW and other environmental observational data are available to users online and, when possible, in near real time.

(Reference: WMO (2007), Global Atmosphere Watch Strategic Plan: 2008 - 20015, GAW Report No.172, World Meteorological Organization, Geneva, Switzerland)

2. Activities since Meeting in 2012

2.1. Telecons

- 5 telecons
 - September 2012 (telecon-3)
 - February 2013 (telecon-4)
 - June 2013 (telecon-5)
 - September 2013 (telecon-6)
 - November 2013 (telecon-7)
- Telecons provide an opportunity to
 - keep abreast of each other's activities
 - advance certain action items, but clearly not all.
- Telecons are limited in advancing
 - The discussion on strategic direction
 - Action items that need in-depth discussion

2.2. Topics addressed

- Operational aspects of WDCs
- Data acquisition
 - Data submission guidelines
 - Data format specifications
- Data documentation
 - Metadata specifications at each WDC
- Data dissemination and interoperability
- Definition of GAW Profile of ISO19115
- Definition of vocabularies
- Interaction with WIS / WIGOS

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2.3. **GAW Strategic Plan: Implications for ET-WDC**

- Task 5.1: [...] implement appropriate data access, dissemination, and security policies
→ Need improved access to WRDC, (WDCPC)
- Task 5.2: Continue cooperative relationships with contributing networks to increase submission of data to WDCs
→ Submissions to WOUDC decrease. Some of that is due declining networks and the most recent decline may be simply due to late data submission
→ GAW (data management) could still improve formal collaboration with some aerosol but also GHG observations networks that are funded either by strong government agencies (NASA) or EU (IAGOS, ICOS, ACTRIS, NORS, MACC) or other institutions (DEBITS, EIONET, EANET, NADP, ...)
- Task 5.3: Harmonize metadata information among WDCs and GAWSIS, in particular with respect to data quality and traceability information.
→ good collaboration between GAWSIS and WOUDC, WDCGG, WDCA, WRDC, NDACC
→ some definition issues with EBAS/EMEP (vocabularies, scope of GAW)
→ see doc_5.2.1 on GAW metadata profile for opportunities for future metadata exchange
→ WIGOS metadata profile will at least contain elements on data quality
- Task 5.4: Operate [...] comprehensive set of data plausibility checks [...]
→ see doc_6.1, doc_6.2 of this meeting
→ information in a common format needed on each WDCs' web page and copy/pasted to GAWSIS as important outreach material
- Task 5.5: Identify [and fill] gaps in metadata record [...]
→ ongoing task
→ no information available to ET-WDC chair, Secretariat, or user community; also an important outreach activity for building trust
- Task 5.6: Further maintain and develop internet sites for GAWSIS and each WDC that provide user-friendly access [...], and value-added products [...]
→ work in progress, many WDC undergoing re-factoring right now
→ need to harmonize these activities now (!!) before projects have advanced too far.
→ need to communicate this as a result of ET-WDC efforts also
→ see doc_6.2, agenda item 8 this meeting
- Task 5.7: Support scientific assessments and produce value-added products [...]
→ ongoing effort
→ need to list our contributions to give it more visibility; what's the role of WDCs vs SAGs and science community at large?

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- Task 5.8: Give guidance for making tools available for format conversions [...] → Need is realized, but ... → We need to stop talking and make progress on this one!!
- Task 5.10: Develop cooperative systems for global data discovery and access by establishing links to major networks → ongoing effort, some success → needs work at level of WDCs and GAWSIS → needs formal agreements to be worked up by Secretariat to allow us to develop the global pictures under the umbrella of GAW
- Task 7.64: Develop methodology to accept and archive CO column data from satellite and ground-based observations → unclear if this task is being worked on at all and who has an interest

3. WIS and WIGOS

- ET-WDC involved heavily by developing GAW metadata profile (doc_5.2) and with contributions to TT-WMD for the definition of the WIGOS metadata standard

4. Outlook

Our common understanding of data management, metadata and interoperability have developed during the last 10 years ... but technology and the numbers of stakeholders have advanced even more. For GAW and GAW WDCs, the challenge of remaining a leader in the actual implementation and operation of observations is increasing. Unfortunately, even as the number of funding opportunities increases, the WDCs are not always or often even not at all part of these projects, programmes, initiatives (some of the big NASA and EU projects have been mentioned, one could add GEO AQ CoP, probably others). If GAW WDCs want to be more than the archives of old programs such as Dobson, or secondary archive for NOAA, or a labeling facility for EC project data, or a host for data of stations that are not involved in other projects/programs, then we need to

- Provide a service of high quality
- Be attractive for data users and science (so that no project data bases cum archives are needed, but instead our WDCs are being involved)

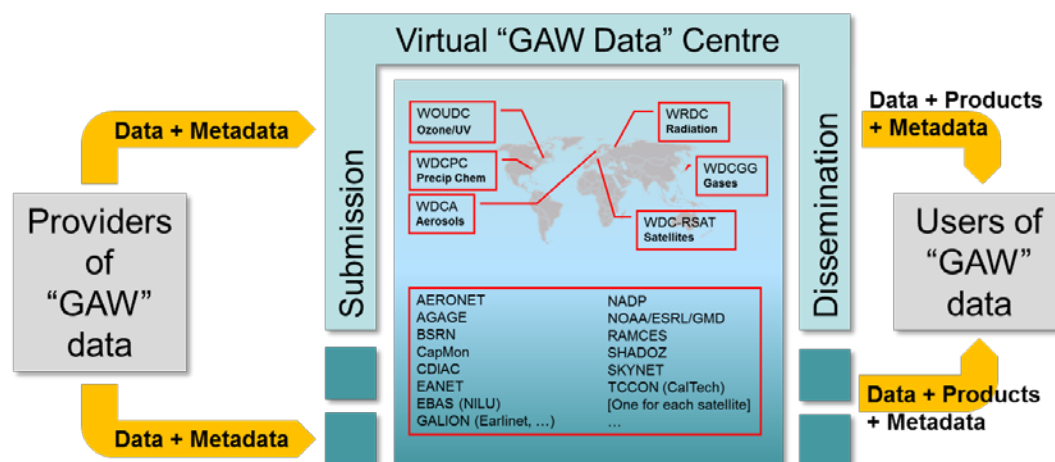
How can this be achieved? In my mind, we need a common vision that translates into common goals that translate into common action. Elements of this are

- Increased interoperability
- Increased standardization
- Improved data policy that takes into account the needs of projects (and perhaps restricts data access at for some time)
- Involvement of some sort in the n.r.t. data delivery (at least GAWSIS could provide a catalogue of sources) and strengthening our role in establishing mechanisms so that n.r.t. make it to our WDCs after adequate QA/QC and in a timely manner

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- ➔ develop a common (from the provider/user point of view) input/output facility for data and metadata related to GAW based on a distributed system of WDCs / DCs / GAWSIS with automatic conversion of formats ('virtual GAW data centre' with common look-and-feel), where
 - data can be submitted to and where the metadata determine where the data are processed and archived
 - data can be retrieved from in a number of formats with standardized metadata
- ➔ Ensure the data quality in the archives, including strict harmonisation of formats ("no tolerance policy for inconsistencies or errors in formats, units etc"), standardisation of metadata within and among WDCs
- ➔ Establish a system for archiving original raw data for ground based total ozone measurements, including the associated calibration history information to facilitate accurate tracability of the instruments' performance (same holds true for all WDCs)
- ➔ getting data from 'large urban complexes' on the radar of GAW WDCs / GAWSIS
- ➔ improve and formalize the documentation of traceability of observations and the ensuing data and their versions

A vision:



A concrete plan (to be realized by 2015 and 2017, respectively)

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